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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,164	03/26/2007	Martin Donath	WEM-082US	4126
54004	7590	09/30/2009	EXAMINER	
MUIRHEAD AND SATURNELLI, LLC 200 FRIBERG PARKWAY SUITE 1001 WESTBOROUGH, MA 01581				COSIMANO, EDWARD R
2863		ART UNIT		PAPER NUMBER
09/30/2009		MAIL DATE		DELIVERY MODE
				PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/590,164	DONATH ET AL.	
	Examiner	Art Unit	
	Edward R. Cosimano	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 21 August 2009.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-52 is/are pending in the application.
 4a) Of the above claim(s) none is/are withdrawn from consideration.
 5) Claim(s) 1-52 is/are allowed.
 6) Claim(s) _____ is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 21 August 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>08/21/2006</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

Art Unit: 2863

1. When preparing this Office action the examiner considers the instant application to include:

- A) the Oath/Declaration filed on 26 March 2007 which is acceptable to the examiner;
- B) the Abstract filed on 81 August 2006 (from WO 2005/085784 A1 publication of PCT/EP2005/001397) which is acceptable to the examiner;
- C) figures 1, 2 & 3 of the set of drawings containing 2 sheets of 3 figures comprising figures 1, 2 & 3 as presented in the set of drawings filed on 21 August 2006 where the content of figures 3 of the above set of drawings is/are acceptable to the examiner;
- D) the written description as filed on 21 August 2006 and amended on 21 August 2006; and
- E) the amended set of claims as filed on 21 August 2006.

2. Applicant's claim for the benefit of an earlier filing date pursuant to 35 U.S.C. 120, 35 U.S.C. 365(c) and 35 U.S.C. 371 are acknowledged.

3. The examiner has considered the prior art cited in the base applications.

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

5. The examiner has approved the proposed changes to figures 1, 2 & 3 of the drawings as filed on 21 August 2006.

6. Applicant is required to submit a copy of the following prior art mentioned in the written description with a properly completed PTO-1449 listing this prior art for the record, since the referenced documents and/or publications may become unavailable for any one of a number of reason. In this regard note:

- A) the Non Patent Literature (NPL) referenced as regulation "DIN 4701/VDI 2067" in the paragraph located at page 2, lines 14-19: "The more the installed ... according to regulation DIN 4701/VDI 2067.", of the written description. See also the reference to "DIN 4701" on page 26 in the paragraph at page 26, lines 8-14: "The maximum daily ... as the building's storage capacity.".

B) foreign document DE 6 326 281 C2 as mentioned in the paragraph at page 3, lines 16-29: “A method is known from DE 6 326 281 C2, in … as a basis.”, of the written description.

C) foreign document DE 162 581.9 mentioned in the paragraph at page 4, lines 1-5: “A method is known from DE 162 581.9, in … actual energy output.”, of the written description.

D) the NPL referenced as “first German Federal Emission Control Ordinance (1. BImSchV)” in the paragraph located between page 25, line 19, and page 26, line 2: “According to the … taken from corresponding tables.”, of the written description. See also the reference to “1. BImSchV” on page 30 in the paragraph at page 30, line 12: “Pursuant to … following approximation:”.

7. The drawings filed on 21 August 2006 are objected to because:

A) the drawings fail to comply with 37 CFR 1.84(p)(5) because they include the following reference legends that have not been mentioned in the written description, note reference legends 15, “ $P_{Br, \text{actual}}$ ” and “ $P_{\text{gain}, \text{actual}}$ ” which have not been mentioned in the written description of figure 1 located in paragraphs between page 14, line 24, and page 17, line 24: “In the case of system … hot water may also be taken into account.” of the written description and note the corresponding objection to the disclosure.

B) the drawings fail to comply with 37 CFR 1.84(p)(5) because they include the following reference legends that have not been mentioned in the written description, note reference legend “ $T_{\text{outside, measurement limit}}$ ” of figure 2 which has not been mentioned in the written description of figure 2 located in paragraphs between page 17, line 16, and page 18, line 13: “Strong wind, temperature … is dependent on the outside temperature.” of the written description and note the corresponding objection to the disclosure.

C) the drawings fail to comply with 37 CFR 1.84(p)(5) because they include title legends that have not been referenced in the written description. In this regard note that because figure 3 lacks the use of reference legends for each of the depicted flow boxes and a one to one correspondence between the description of figure 3 is not clear from the written description between page 18, line 14, and page 36, line 6: “In the case of … daily

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performance for process water heating.”, then it is unclear whether or not applicant has provide an explicit description of what is depicted in figure 3.

7.1 Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8. The disclosure is objected to because of the following informalities:

A) applicant’s placement of the section heading “SUMMARY OF THE INVENTION” above line 14 on page 1, see the preliminary amendment filed 21 August 2006, is confusing in view of the fact that as can be seen on page 1 of the written description, there is a paragraph located at page from line 7-14: “The efficient use ... achieved during operation in practice.”, and the placement of the section heading would occur in the middle of this paragraph. In view of this it would appear that this amendment should have been placed at page 4, above line 14.

B) the following errors and/or inconsistencies between the drawings filed on 21 August 2006 and the written description have been noted:

(1) the written description fails to comply with 37 CFR 1.84(p)(5) because the written description does not include an explicit reference to the following reference legends, note reference legends 15, “ $P_{Br, actual}$ ” and “ $P_{gain, actual}$ ” of figure 1 which have not been mentioned in the written description of figure 1 located in

paragraphs between page 14, line 24, and page 17, line 24: "In the case of system ... hot water may also be taken into account." of the written description.

(2) the written description fails to comply with 37 CFR 1.84(p)(5) because the written description does not include an explicit reference to the following reference legend, note reference legends " $T_{\text{outside, measurement limit}}$ " of figure 2 which has not been mentioned in the written description of figure 2 located in paragraphs between page 17, line 16, and page 18, line 13: "Strong wind, temperature ... is dependent on the outside temperature." of the written description.

(3) the written description fails to comply with 37 CFR 1.84(p)(5) because the drawings include title legends that have not been referenced in the written description. In this regard note that because figure 3 lacks the use of reference legends for each of the depicted flow boxes and a one to one correspondence between the description of figure 3 is not clear from the written description between page 18, line 14, and page 36, line 6: "In the case of ... daily performance for process water heating.", then it is unclear whether or not applicant has provide an explicit description of what is depicted in figure 3.

8.1 Appropriate correction is required.

9. This application is in condition for allowance except for the following formal matters:

A) see the above objections as set forth above in sections 6 through 8.

9.1 Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

9.2 A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

10. The following is a statement of reasons for the indication of allowable subject matter over the prior art:

A) the prior art, for example:

(1) either Spitzglass (1,730,541) or Germer (2,252,367 or 2,252,369) or Weisser et al (4,355,908) or Nethery (4,362,499) or Shriver et al (4,749,122) disclose a machine/process that provides the useful and beneficial function of

determining the efficiency or performance of a heating machine/process by measuring or sensing or determining or monitoring flue or exhaust gas content and combustion conditions, for example the amount of fuel supplied to the combustion process as well as the heat supplied by the heating machine/process. The measured data/information is then processed in order to determine the efficiency or performance of the heating machine/process based on the difference in the heat loss, that is the theoretical heat minus the heat of the flue/exhaust gases, divided by the theoretical heat that may be produced by combustion. Where in either Spitzglass (1,730,541) or Weisser et al (4,355,908) or Nethery (4,362,499) or Shriner et al (4,749,122) the results of the determination of the efficiency or performance of the heating machine/process is used in order to control the operation of the heating machine/process

(2) either Anderson (2,883,255) or Schlein (3,202,804) disclose a machine/process that provides the useful and beneficial function of a monitoring and alarm/warning machine/process in which the operation of a machine/process is characterized by using a sufficient number of one or more sensors in order to monitor or sense or measure each of the one or more operating characteristics or parameters of the monitored machine/process. The data/information from each of the one or more sensors is then communicated over a suitable communications link to a central monitoring station or location. At the central monitoring station or location, the received sensor data/information from each of the one or more monitoring sensors is compared to one or more corresponding thresholds that represent the normal or desired operating value for the corresponding operating characteristic or parameter of the monitored machine/process. When this comparison results in an indication that one or more of the sensed or monitored or measured operating characteristics or parameters of the monitored machine/process has deviated or varied from the corresponding threshold that represents the normal or desired operating value for the corresponding operating characteristic or parameter of the monitored machine/process, then the user/operator of the central monitoring station or location is provided with a

suitable and readily recognizable alarm or warning or indication of each of the one or more sensed or monitored or measured operating characteristics or parameters on the monitored machine/process that has deviated from the normal or desired operating value for the corresponding operating characteristic or parameter of the monitored machine/process. Where (2a) in Anderson (2,883,255) the central monitoring station or location is remote from the monitored machine/process, and (2b) in Schlein (3,202,804) the thresholds for the sensed or monitored or measured operating characteristics or parameters are set by using adjustable user/operator inputs.

(3) either Bergman (DE 27 53 485 A1) or GB 1 562 536) disclose a machine/process that provides the useful and beneficial function of determining the efficiency or performance of a heating machine/process by measuring or sensing or determining or monitoring: (3a) waste gas content, for example amount of CO₂, O₂, etc., (3b) waste gas temperature, (3c) intake air temperature, (3d) combustion conditions, for example the combustion temperature, the amount of CO₂, O₂, etc. supplied to the point of combustion, and (3e) the heat supplied to the heating machine/process and then processing the measured/sensed or determined/monitored data/information in order to determine the efficiency or performance of the heating machine/process based on the difference in the heat loss, that is theoretical heat minus the heat of the flue/exhaust gases, divided by the theoretical heat that may be produced by combustion.

(4) Alt et al (4,621,528) discloses a machine/process that provides the useful and beneficial function of determining the required size of a replacement machine/process by measuring or sensing or determining or monitoring: (4a) amount of time that the current machine/process operated during a period of time and (4b) the peak demand of the machine/process during the period of time and then processing the measured/sensed or determined/monitored data/information in order to determine the efficiency or performance of the machine/process during the period of time. Then the determined performance of the machine/process in combination with the peak demand of the machine/process and the operating time

of the machine/process are used in order to determine the size of the replacement machine/process that will meet the required performance, peak demand, and operating time requirements of the intended use of the replacement machine/process.

(5) either Amrhein et al (DE 3626281 A1) or Schneider (DE 3730529) disclose a machine/process that provides the useful and beneficial function of determining the efficiency or performance of a machine/process by measuring or sensing or determining or monitoring amount of time that the current machine/process operated during a period of time. The determined operating time is then divided by the duration of the monitoring period in order to determine the efficiency or performance of the machine/process during the monitoring period.

(6) either Kopetzky et al (DE 10030294 A1) or Freihofer et al (DE 100 30 294 A1) disclose a machine/process that provides the useful and beneficial function of determining the energy consumption of a building/structure or machine/process by measuring or sensing or determining or monitoring amount of energy that is actually consumed by the building/structure or machine/process operated during a period of time. The determined energy consumption is then divided by a determined/calculated theoretical amount of energy consumption that should be consumed by the building/structure or machine/process in order to determine the efficiency or performance of the building/structure or machine/process during the monitoring period.

(7) Brauns (DE 100 57 834 A1) discloses a machine/process that provides the useful and beneficial function of controlling the operation of a heating machine/process by measuring or sensing or determining or monitoring: (1) outside temperature and (2) inside temperature in order to use a determined difference in temperatures in order to determine a control value that is used in order to control the operation of the heating machine/process.

B) however, the prior art does not fairly teach or suggest in regard to claim 1 a process in claim 1 that provides the useful and beneficial function of determining the demand or load or utilization of a heating machine/process being used to heat an

environment during a measuring period or interval or window by providing actions in claim 1 that perform at least the functions of:

- (1) determining or measuring for each time interval/period during the measuring period or interval or window each of: (1a) the fuel power, (1b) the interior temperature of the environment being heated, and (1c) the combustion air temperature;
- (2) sensing or measuring for each time interval/period during the measuring period or interval or window each of: (2a) waste gas concentration, (2b) waste gas temperature, and (2c) the temperature of the exterior of the environment being heated;
- (3) determining or calculating the efficiency or performance of the heating machine/process for each time interval/period during the measuring period or interval or window from: (3a) the measured waste gas concentration, (2b) the measured waste gas temperature, and (3c) the determined combustion air temperature;
- (4) determining for the measuring period or interval or window both: (4a) the average interior or inside temperature of the environment being heated from the monitored interior or inside temperature of the environment being heated and (4b) the average exterior or outside temperature for the environment being heated from the monitored the exterior or outside temperature of the environment being heated;
- (5) determining or calculating the average efficiency or performance of the heating machine/process at a determined average exterior or outside temperature for the measuring period or interval or window from: (5a) the determined fuel power, and (5b) the determined or calculated efficiency or performance of the heating machine/process during the measuring period or interval or window;
- (6) determining or calculating maximum efficiency or performance of the heating machine/process at a determined minimum exterior or outside temperature for the measuring period or interval or window the from: (6a) the determined average efficiency or performance of the heating machine/process

during the measuring period or interval or window, (6b) the determined minimum exterior or outside temperature for the measuring period or interval or window, and (6c) the determined average interior or inside temperature for the measuring period or interval or window; and

(7) determining or calculating the heating load connected to the heating machine/process for the measuring period or interval or window from: (7a) the determined maximum efficiency or performance of the heating machine/process for the measuring period or interval or window, and (7c) the duration of the measuring period or interval or window.

Claims 2-48 & 50, which depend from claim 1, are allowable over the prior art for the same reason.

C) however, the prior art does not fairly teach or suggest in regard to claim 42 a machine in claim 42, that provides the useful and beneficial function of determining the demand or load or utilization of a heating machine/process being used to heat an environment during a measuring period or interval or window by providing structures in claim 42 that perform at least the functions of:

(1) determining or measuring for each time interval/period during the measuring period or interval or window each of: (1a) the fuel power, (1b) the interior temperature of the environment being heated, and (1c) the combustion air temperature;

(2) sensing or measuring for each time interval/period during the measuring period or interval or window each of: (2a) waste gas concentration, (2b) waste gas temperature, and (2c) the temperature of the exterior of the environment being heated;

(3) determining or calculating the efficiency or performance of the heating machine/process for each time interval/period during the measuring period or interval or window from: (3a) the measured waste gas concentration, (2b) the measured waste gas temperature, and (3c) the determined combustion air temperature;

(4) determining for the measuring period or interval or window the average exterior or outside temperature for the environment being heated from the monitored the exterior or outside temperature of the environment being heated;

(5) determining or calculating the average efficiency or performance of the heating machine/process at a determined average exterior or outside temperature for the measuring period or interval or window from: (5a) the determined fuel power, and (5b) the determined or calculated efficiency or performance of the heating machine/process during the measuring period or interval or window;

(6) determining or calculating maximum efficiency or performance of the heating machine/process at a determined minimum exterior or outside temperature for the measuring period or interval or window the from: (6a) the determined average efficiency or performance of the heating machine/process during the measuring period or interval or window, (6b) the determined minimum exterior or outside temperature for the measuring period or interval or window, (6c) the determined average interior or inside temperature for the measuring period or interval or window, and (6d) a determined average exterior or outside temperature for the measuring period or interval or window; and

(7) determining or calculating the heating load connected to the heating machine/process for the measuring period or interval or window the from: (7a) the determined maximum efficiency or performance of the heating machine/process for the measuring period or interval or window, and (7c) the duration of the measuring period or interval or window.

Claims 43-48 & 52, which depend from claim 42, are allowable over the prior art for the same reason.

D) however, the prior art does not fairly teach or suggest in regard to claim 49 a process in claim 49, that provides the useful and beneficial function of determining the demand or load or utilization of a heating machine/process being used to heat an environment during a measuring period or interval or window by providing actions in claim 49 that perform at least the functions of:

- (1) determining or measuring for each time interval/period during the measuring period or interval or window each of: (1a) the fuel power, and (1b) the combustion air temperature;
- (2) sensing or measuring for each time interval/period during the measuring period or interval or window each of: (2a) waste gas concentration, and (2b) waste gas temperature; and
- (3) determining or calculating the efficiency or performance of the heating machine/process for each time interval/period during the measuring period or interval or window from: (3a) the measured waste gas concentration, (2b) the measured waste gas temperature, and (3c) the determined combustion air temperature.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward R. Cosimano whose telephone number is 571-272-0571. The examiner can normally be reached on 571-272-0571 from 7:30am to 4:00pm (Eastern Time).

11.1 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn, can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11.2 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ERC
09/28/2009

**/Edward Cosimano/
Primary Examiner Unit 2863**